

Interim Report
of the Porcupine Woods Subcommittee
Parks and Open Spaces Committee
January 3, 2013

Background. Porcupine Woods was acquired by the Town in the mid-1970's when a developer threatened to build townhouses on the property; it comprises approximately 2.5 acres. Contemporaneous with the Town's acquisition a committee was formed to consider possible uses for the space; the subcommittee presented its findings and recommendations in a report dated March 31, 1975. Among other recommendations the committee urged that the Woods be retained as a "quiet, natural place...to stroll and enjoy the seasonal changes...[with] no unnatural man-made objects." As discussed below, specific recommendations made to achieve this objective were more detailed, active and prescient. The Town Council unanimously agreed with the recommendations in the report at its April 14, 1975 meeting.

In September 2012, the Parks and Open Spaces Committee (POSCO) established this subcommittee in view of nearly four decades of changes in Porcupine Woods: the ongoing battle against invasive species, especially bamboo; the devastating storm of June 29, 2012 that brought down trees and left the understory littered with limbs and branches; and citizen concerns expressed in the 2009 POSCO survey about erosion control and water management in the Woods. POSCO asked the subcommittee to look at park stewardship issues and recommend actions the Town should take. Members of the subcommittee are: Suzanne Grefsheim, Chair, Chris Keller, Frank Obrimski, Cathy Rinzel, and Ken Schwartz.

The subcommittee met on a number of occasions, both on-site and at Town Hall. We utilized the expert guidance of several skilled professionals, principally the Town's consulting arborist, Phil Normandy, Plant Collections Manager of Brookside Gardens. In addition, the subcommittee consulted with Bartlett Tree Service, David Gregg, and Butch. An informal survey of homeowner/residents abutting Porcupine Woods was undertaken. Research was carried out in the Town Archives and elsewhere. This report constitutes a statement of the findings and recommendations of the subcommittee in the most crucial areas of Porcupine Woods that require attention. One subject – drainage and erosion – bears further study, but the importance of timely action on other recommendations prompts us to urge the Town Council to move without delay on the proposals we make below.

Discussion. The 1975 committee anticipated many of the major environmental preservation initiatives we are encouraged to adopt today; for example, it recommended removal of invasive species, replacing them with native plants; improving drainage of the creek bed, whose water ultimately ends up in the Bay; and actively managing the Woods, which ensures the health of the

ecosystem. The 1975 recommendations are particularly relevant given the current condition of Porcupine Woods.

Existing conditions. Porcupine Woods has been largely left in an unmanaged “natural” state, with the exception of two paths through the woods, between Penn Place and Clermont Avenue, and two small footbridges spanning the drainage creek. Starting shortly after establishment of the Arboretum Committee in 1977 and extending into the early 80’s, volunteers undertook new plantings throughout Porcupine Woods; in the early 1990’s a small area was planted as an experiment in establishing a stand of desirable native plants. Many of the original plantings and the entire 1990’s plot have disappeared; some of the damage is attributable to the increased presence of deer, but most is owing to competition from invasives and to lack of adequate follow-up/ongoing maintenance. The Town did not have a competent maintenance man until 1993 and the current maintenance staff is stretched too thin to undertake major maintenance in Porcupine Woods.

Wood chips are spread on the paths annually by the Town maintenance staff, which typically undertakes additional work in the park only in response to exceptional developments such as removing fallen trees or limbs blocking a path, or adding chips to discrete sections of the path washed out by heavy rains. Approximately once a year the Arboretum Committee organizes a “Weed Warrior Day” to pull weeds and invasive shrubs. Individuals, too, have dedicated many unpaid hours to weed out invasive plants. Although the efforts of volunteers are both generous and appreciated, they barely scratch the surface of needed preservation and maintenance. For all practical intents and purpose, there is no ongoing routine maintenance or care of the Woods.

Several factors have combined to change the character of the Woods over the period of Town ownership. Although these include a vastly increased deer population and an apparent change in storm runoff patterns, the primary cause – the one that causes greatest concern – is the accelerated spread of invasive non-native species such as bamboo, kudzu, honeysuckle, English ivy, and Norway maples. “Invasives” are plants that are so successful competing for available sunlight and moisture that they make it impossible for desirable plants to survive in the same space. Invasives eventually choke out most natives, severely disrupting the normal cycle of forest regeneration, and result in a monoculture when they are allowed to grow undeterred. Phil Normandy estimates that the understory of Porcupine Woods is now approximately 50% invasives.

Committee analysis. For many years, there has been a tacit acceptance of the notion that leaving the Woods unmanaged is an appropriate way to realize the 1975 committee’s recommendation that the park remain a “quiet, natural place...[with] no unnatural man-made objects.” One of the first decisions of the current Porcupine Woods subcommittee was to look closely at the 1975 report. What we found is that the 1975 report in fact made more detailed and nuanced

recommendations, most of which not only reflected then-current conditions (e.g., bamboo already present in the park) but also anticipated the heightened environmental and stewardship issues that concern us today. This subcommittee decided to build upon and update the recommendations from 1975 (*italics* below), including:

“Dead and hazardous trees and branches should be cut down...” Although some non-hazardous snags (standing trunks) of trees should be left for woodpeckers and other wildlife, trees damaged in the 2012 *derecho* or otherwise hazardous (e.g., diseased, leaning over or near paths) should be cut down. Phil Normandy identified the trees that should be removed for safety, as well as two removals adjacent to the white oak planted 19 years ago near the Clermont end of the park (the tree is a seedling of the historic Wye Oak) to permit that desirable native to thrive. Most trunks of downed trees should be left to decompose as this contributes to a healthy woodland environment. The 1975 report recommended chipping branches and small limbs, and we recommend a similar program, where possible.

“Remove invading bamboo, briar and honeysuckle...[and] replant with wildlife-attracting shrubs.” This 1975 recommendation was made with specific reference to the area nearest Clermont Avenue, where it was partially carried out. The existing viburnums and other shrubs and small trees are among the few late-70’s plantings that remain; they have been largely successful, but the nearby bamboo has spread considerably. Bamboo is an especially pernicious invasive; Phil Normandy described the current stand of bamboo as a “green desert”: nothing else will grow there because the bamboo blocks all light. It provides no habitat diversity or food for birds. After much discussion and consultation, the current committee believes that the 1975 committee got it right: removal is the only sensible option. “Containment” of bamboo is a horticultural oxymoron; most control techniques are expensive, not fully effective, and require constant maintenance. We recommend eradication of the bamboo that currently occupies a significant portion of the southwest quadrant of the Woods. Members of this subcommittee have sought to survey the residents and/or owners of the five houses on Montrose Avenue that border the Park. Only one comment has been received to date. Initially, the resident indicated that preservation of a bamboo screen in the Woods was desirable, but then seemed to accept another option – removal of all bamboo if other plantings replaced the bamboo to provide for screening.

We also believe that the Town should encourage heightened volunteer efforts to remove invasives. Volunteer work to remove bush honeysuckle, Norway maple and certain other invasives along the west side of the path, between the path and the backs of the houses on Montrose, has met with a degree of success. More work is required to address the same problem throughout the park, however. This subcommittee believes that if volunteer work is insufficient to make real headway hiring help for the Town maintenance crew would be advisable; unskilled (supervised) casual labor would be adequate.

Recommendations. Although some work in Porcupine Woods can be accomplished by volunteers, meaningful steps require more formal Town involvement, including financial commitment, by:

Hiring professional services to remove all bamboo. As discussed above, bamboo is a significant problem in Porcupine Woods, becoming more so in recent years as the bamboo has spread from the Woods' border with the properties on Montrose Avenue to the path through the Woods. Several residents have, through conscientious volunteer efforts, managed to temporarily stem its spread in some areas, but anything short of eradication is essentially consigning those volunteers and/or the Town to a ceaseless, intensive containment effort. Eradication requires professional help because it requires specialized expertise; moreover, the work is of a scope that is beyond the time and abilities of volunteers or even the Town maintenance staff. The subcommittee contacted several reputable firms for the removal of the bamboo. The firms also have somewhat different approaches for the removal of the bamboo. One approach relies on cutting and repeated spraying with the herbicide RoundUp. The other on digging up the roots where possible and follow up cutting and/or spraying where necessary. While RoundUp (glyphosate) is considered by experts to be "virtually ideal due to its low toxicity" and to cause no adverse effects on humans, wildlife, or the Bay when applied properly, some will find its use undesirable. On the other hand, digging up roots that go two feet or more into the soil can present sediment and erosion control problems, which need remediation. Below are summaries of the two approaches for which we have an estimate at this time.

Bartlett Tree Experts. Bartlett provided an estimate. Bartlett recommends a systematic program of cutting, spraying and re-spraying (with Roundup) the bamboo in Porcupine Woods for one year (including two applications of herbicide in mid and late summer) that will cost approximately \$6,000. Bartlett's offer assumes that heavy equipment would not be brought in to remove the bamboo; rather, manual cutting, herbicide injections and repeated sprays would eliminate the bamboo over time. Installing a barrier to prevent spread of bamboo from the adjoining Montrose Avenue properties would cost an additional \$7,000 (for a total of \$13,000). Comparatively, if owners of adjoining Montrose Avenue properties are willing to have the bamboo on their property removed at the same time as the Woods' bamboo is removed, this could be done for a total cost of approximately \$14,000. Total removal, including on the neighboring properties, would be the preferable approach. On the other hand, we would not want to hold up progress on the project if quick agreement with the owners of the adjoining properties is not forthcoming. If the neighbors prefer to retain their properties' bamboo stands, we recommend proceeding with installation of the barrier. Finally, this proposal assumes that for the next several years, bamboo sprouts will need to be sprayed at least 2-3 times a year. This work could be done by Town staff or volunteers, or by Bartlett for an annual fee.

Bonifant Tree Service. Bonifant also submitted an estimate. Unlike Bartlett, it would bring in equipment (type of equipment not yet specified) to remove the bamboo roots. Bonifant would cut existing stand close to the ground and then dig up the roots, therefore, minimizing the use of herbicides. However, they will not dig roots from the previously cut, low-growth (less than 3 ft in height) bamboo to avoid damaging nearby trees and shrubs. This area would be cut and would require annual cutting until no new growth is evident. For this, Bonifant would charge \$25,000 (not including subsequent cutting of regrowth). Bonifant's estimated charge for installation of a bamboo barrier is similar to Bartlett's -- \$7,650 for Bonifant vs. \$7000 for Bartlett. Bonifant's total cost for these two elements (bamboo removal and bamboo barrier) is \$32,650. Finally, Bonifant would charge \$10,500 for bamboo removal and root removal for the three Montrose properties adjoining the Woods.

In summary, the two companies would address the bamboo problem differently. Bartlett would use an herbicide (Roundup) but not dig up the roots, while Bonifant potentially would use heavy equipment to dig up the roots and create a sediment and soil erosion problem, but not apply herbicide. And the price estimates of the two firms are significantly different, as follows:

Bartlett. *Option A:* \$13,000 - remove bamboo from the Woods only and install a bamboo root barrier to deter re-entry from Montrose properties. No roots removed. Annual herbicide application until no re-growth is apparent - not included in estimate.

Option B: \$14,000 - remove bamboo from the Woods and the Montrose properties. No root barrier necessary. No roots removed. Annual herbicide application as above - not included in estimate.

Bonifant: *Option A:* \$32,650 - remove bamboo and roots from the Woods and install a bamboo root barrier to deter re-entry from Montrose properties. No herbicides. Annually monitor for re-growth and cut back as necessary - not included in estimate.

Option B: \$35,500 – remove bamboo and roots from the Woods and from the Montrose properties. No root barrier necessary. Annually monitor for re-growth and cut back as necessary - not included in estimate.

At this time, the subcommittee is seeking estimates from at least two additional firms. One of these firms is located in SE Pennsylvania and has extensive experience in bamboo removal from properties similar to Porcupine Woods in scale and difficulty. Like Bonifant, which has no similar experience, they remove the roots and use no chemicals. Their communications with the subcommittee cited costs for recent large-scale projects that ranged from \$12,000 to \$20,000. To get an on-site assessment and viable estimate from them we need to pay for a site visit -- probably totaling about \$150. The subcommittee recommends that the Council authorize this site visit before a contractor is selected.

Hiring a professional tree service to remove a limited number of identified trees. We recommend professional removal of four trees (i) one that is stunting the growth of the 19 year old Wye Oak bordering Clermont Avenue; (ii) three other trees that were damaged in the June 29 *derecho* and pose a hazard to persons walking in the park; and (iii) professional removal of a large downed tree on one of the Montrose neighbor's property that has fallen over the Woods' property line and which is too large for the Town's equipment to chip, thereby creating space for new plants and/or to allow for understory plants to grow. Finally, the tree service would remove some of the largest downed tree trunks now littering the northwest side of the Woods near Penn Place. The subcommittee has obtained an estimate from David Gregg Tree Service. For the work specified above, the cost would be about \$5600.

Authorizing the Town maintenance staff to chip in place downed limbs and branches, using the chips to renew the pathways or broadcasting them in the woods to decompose. Downed limbs and branches in areas away from places accessible to the chipper (mostly in the northeast and northwest portions of Porcupine Woods) can be dragged to several separate spots to serve as shelter for wildlife, and/or can be cut up by Town maintenance staff and used to border the current pathways through the Woods. The subcommittee recommends that the Town maintenance staff be tasked with completing this task this winter to minimize possible damage to other vegetation in the Woods. Butch has been consulted regarding this task, and he is comfortable with it, assuming that the Town Council approves. The Town's equipment can chip limbs up to 9 inches in diameter.

Authorize planting appropriate replacement trees and shrubs using native stock, if possible, and typically planted by the Town maintenance staff. This is particularly important along the southwestern boundary that is shared with residences on Montrose, to provide a visual screen in place of the current bamboo. In areas where Norway maples and other invasives now reign, we recommend planting buckeyes (the shrubs, not the trees) and/or other flowering shrubs. A wider diversity of plants that are both deer resistant and non-invasive should be introduced. The subcommittee does not yet have an estimate of likely costs associated with such plantings. However, we would "guesstimate" \$5,000. Such plantings should ONLY be undertaken if the Montrose neighbors agree to remove the bamboo on their properties. If they choose not to do so, any new plantings along the border would soon be overwhelmed/overshadowed by the existing stands of bamboo.

Total Cost Estimate and Timing of the Work: The cost estimates are under development and are subject to change. However, using the current low bid for bamboo removal just in Porcupine Woods (Bartlett), the cost estimate for FY 2013 is \$27,600 (see below). Should a different firm/approach be selected and should the Montrose properties be included, the costs are likely to be somewhat higher, although the difference between including the Montrose properties and

installing a barrier are relatively small. Indeed, any difference may be covered by the contingency funds in the \$27,600 requested.

- Bamboo removal in Woods and barrier installation - \$13,000
- Tree removal and Large Tree Clean-Up - \$5,600. Includes: 1) limited tree removal to prompt growth in the Wye oak, 2) improved Woods safety from additional tree removals, and 3) removal of the larger downed limbs now littering the Woods that are too big for the Town-operated equipment to chip.
- Contingencies - \$4,000 (about 20% of total cost). We are continuing to seek estimates from other contractors, which could lead to cost escalation, especially if the tasks are expanded to include additional minor tasks.
- Finally, if the Montrose neighbors agree to remove bamboo in their yards, we recommend adding \$5,000 for plantings along the fence line between the Woods and their properties.
- Use of Town Maintenance Staff. There would be no additional cost from using Town maintenance staff to perform the tasks outlined above (e.g. limb chipping), but it would divert their time from other Town maintenance activities.

Based on the above, we recommend that \$27,600 be incorporated into this year's (2013) budget and the project be given the "go-ahead" at the January Council meeting. Preferably, the sum should be included in the capital budget so that the funds do not expire at the end of the fiscal year (June 30, 2013). If the Montrose neighbors decline to remove their stands of bamboo, this projection can be lowered because the \$5,000 for plantings along the fence line would not be required.

In the view of the subcommittee, the chipping and bamboo eradication work should begin as soon as possible. The best time to perform most of the heavy work on the trees is during the winter months, when the ground is hard and when damage to the Woods caused by the work would be minimized. In addition, it would be advantageous to start the work in mid-winter because the price quotes of professional contractors usually decline in the winter when they have less competing, contractual work.

Conclusion: Phil Normandy's comment to our subcommittee was that "For significant progress (in eliminating invasives and encouraging beneficiais), we need to take drastic measures." Although volunteer efforts in Porcupine Woods have been generous and are deserving of our gratitude, they are not enough to effectively provide, consistently and over time, the "quiet, natural place" envisioned when the Town acquired the Woods for the enjoyment of residents. It is time for the Town to make a further concerted investment in the stewardship of this major holding – originally acquired with great effort and at considerable expense – so that it will be the valuable asset envisioned in 1975.